FACTSHEET FOR NPDES PERMIT WA-000007-8

FACILITY NAME

Longview Fibre Company

300 Fibre Way

P. O. Box 639

Longview, Washington 98632

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	Longview Fibre Company
Facility Name and Address	Longview Fibre Company 300 Fibre Way, Longview, Washington 98632
Type of Facility:	Pulp, paper, paperboard mill
SIC Code	Paper - 2621 Corrugated - 2653 Paper Board -2631
Discharge Location	Waterbody Name: Columbia River Latitude: 46° 05' 45" N Longitude: 122° 55' 40" W.
Water body I. D. Number WA-CR-1010 - 1.4 miles upstream of Longview Bridge	

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

In 1927, Longview Fibre Company started producing container-board type paper products. The total output at that time was 100 tons/day. The company started by using waste wood from the Long Bell Lumber Company to make kraft-container-board. Since 1927, the mill has increased production level to an annual average of 3000 tons of paper per day. Today they are one of the largest mills producing unbleached paper and containerboard products in the world. The pulping process currently includes two Kamyr continuous fed Kraft digesters, an old-corrugated-container (OCC) recycling plant, three M & D continuous cookers, a Sunds digester, and fifteen Kraft batch type digesters. The company shut their bleach plant down on March 18, 1994. Since March 18, 1994, the company has not used any chlorine containing compounds to bleach pulp.

The company burns Kraft pulping liquor in four recovery furnaces and produces a large portion of the energy required at the mill. Lime is reclaimed in five lime kilns. Other energy is generated with five gas, oil, and/or hogged fuel boilers. They have one co-generation plant, which burns natural gas in a turbine followed by a heat recovery steam generator to produce electricity and steam. They have 12 paper machines that are operated 24 hours per day seven days per week.

INDUSTRIAL PROCESS

The pulp mill is located on 357 acres. The company also owns and manages over 0.5 million acres of forest land in the northwest. Part of the harvest is used as chip sources to make their paper products. Other raw products used to make paper are sawdust and wood shavings made as a waste product by sawmills, old corrugated boxes, chips made from wood chunks including tree tops, butts, various defective parts of trees, and chips made from whole logs.

The two Kamyr Kraft pulping and washing systems can produce approximately 2120 tons/day of raw pulp. Each Kamyr continuous digesters is a two vessel hydraulic system with chip pre-steaming, two blow-line refiners, and two stage diffusion washers. The recycle mill (OCC) can produce approximately 800 tons/day raw pulp for making paper from used boxes and grocery bags. The company purchases and can repulp a total of 600 tons per day of bleached Kraft pulp. The fifteen Kraft batch digesters, the Sunds digester, and the three M & D cookers furnish the rest of the pulp.

In the past two years, the company monthly average production of salable paper was 2824 tons per day with a maximum production of 3664 tons per day. The highest twelve months average for the past two years was 3100 tons/day of paper products per day. The production used to calculate the biochemical oxygen demand (BOD_5) and total suspended solids limits will have a base production of 3100 tons paper/day and phase I production of 3600 tons/day. The paper is

made from the production of pulp by the unbleached kraft-neutral sulfite semi-chemical, non-integrated purchased pulp, and old corrugated cardboard categories. These production values must be converted to off of the machine production. The conversion of these the base production and phase I production are derived below on page 8 in the "Technology-based Effluent Limitation" section of this factsheet.

The company employs approximately 2000 workers in Longview.

DISCHARGE OUTFALL

All process wastewater currently receives primary treatment in a 350-feet-in-diameter primary clarifier and secondary treatment by an UNOX pure oxygen activated sludge treatment system followed by secondary sedimentation. All of the treated wastewater is discharged via outfall 001 including the collected storm water and the sanitary wastewater to the Columbia River through the diffuser system. The stormwater and filter backwash waters are treated with the primary and secondary wastewater treatment system.

A new outfall was constructed in November 1992. The outfall extends 500 feet in a southerly direction into the Columbia River. The diffuser section extends 400 feet at an average water depth of 40 feet. There are 67 unidirectional ports spaced about 8 feet apart. At this time 60 ports are open and in use.

A primary sedimentation system and a secondary trickling filter system are used to treat the sanitary wastewater on site. The effluent is disinfected with hypochlorite and discharged to the mill's process wastewater outfall pipeline after secondary treatment.

The stormwater discharge, outfall 002, was terminated in the middle of September 1999. At that time, all of the permittee's storm water was thought to have been directed to the company's process wastewater treatment system where the water received primary and secondary treatment with the process wastewater. However, during the drafting of the permit, the permittee discovered two stormwater outfalls that were missed in the stormwater collection system constructed in 1999.

At present, the treatment system with the surge basin can handle a 500-year flood event. If the flow increases during a storm event beyond the capability of the secondary wastewater treatment system, excess water can be routed into the surge basin. The surge basin is lined with an asphalt liner. All collected and treated wastewaters are discharged to the Columbia River via the new outfall, 001. The company is considering constructing the necessary collection system to route these two uncollected areas to the secondary process treatment system within the first year of the permit. The company will be required to do a best management plan (BMP) for control of stormwater discharge in accordance with the "Stormwater Pollution Prevention Planning for Industrial Facilities Guidance" (SWPPP) if they do not capture the water from these areas by the end of the first permit year. If the company connects these discharges to the process wastewater treatment system, the stormwater monitoring requirements will be fulfilled when the Department is notified with proof that the connections are completed. In the permit these two stormwater area discharges will be labeled Outfall 002 and Outfall 003.

The filtered sludge and the filter backwash water generated in the fresh water treatment system is sent to the primary clarifier and dewatered with the primary sludge. All of the water is sent to secondary treatment and then to the mill outfall 001. The mill bypasses excess warm clarified river water to the secondary treatment wet well before being sent to outfall 001.

HISTORY OF DISCHARGE

The total flow for all waters (process wastewater, sanitary wastewater, filter backwash water, and stormwater) discharged averaged 53.25 MGD on a monthly basis during 1998-99 calendar years. The largest daily flow was 75.9 MGD for this time period. During this time period, the effluent contained 3500 lbs. BOD/day and 7700 lbs. TSS/day, respectively, averaged on a monthly basis. The highest daily maximum values were 21,500 lbs. BOD/day and 51,900 lbs. TSS/day. The flow, BOD, and TSS for the sanitary averaged 0.07 MGD, 8.7 mg/L, and 11.5 mg/L, respectively.

PERMIT STATUS

The previous permit for this facility was issued on May 10, 1991 and amended June 7, 1991. The previous permit placed effluent limitations on conventional pollutants, BOD, TSS, and pH and toxic chemicals, absorbable organic halide (AOX) and dioxin for the process wastewater effluent and BOD, TSS, pH, fecal coliform, and chlorine residual for the sanitary wastewater effluent. The company appealed the AOX limits in the issued permit. The company prevailed on the limits for AOX. Ecology prevailed on the required monitoring for AOX

An application for permit renewal was submitted to the Department on November 13, 1995 and accepted by the Department on August 20, 1996. Since the application was submitted approximately four years ago, the permittee was requested to update the application with new sampling and analyses data. Ecology received the updated application on August 21, 2000.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received class 2 compliance inspection in March 2000 and class 1 inspection in September 2000.

During the past four years of the previous permit, the Permittee has remained in compliance based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department except for the sanitary wastewater treatment system and one pH violation in July 1999. A penalty was issued on November 10, 1999 for $6500. The pH violation was included in the penalty. The company had four chlorine residual violations and one daily maximum fecal coliform violation in December 1998. The company was penalized $9,000 for these violations. The company had five chlorine residual violations in October and November 1997. The company was penalized $1,250 for these violations.

WASTEWATER CHARACTERIZATION

The proposed wastewater discharge is characterized for the following detected chemicals:

Table 1: Treated Wastewater Characterization

	Application dated 5/99	Revised Application 8/00
Parameter	Concentration (mg/L)	Concentration (mg/L)
Zinc	0.314	0.314
Iron	0.31	1.01
Magnesium	3.85	2.96
Total organic nitrogen	6.3	1.6
Phosphorus	1.7	0.39
Oil & grease	2.0	ND
Sulfate	140	120
Surfactants	0.22	NR
Barium	0.057	0.084
Aluminum	1.20	0.310
Titanium	0.012	ND
Chloroform	0.0034	0.0019
Total coliform Data (3/30/00)		130 #/100 ml.

SEPA COMPLIANCE

There are no SEPA requirements for this action.

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these methods is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the Department were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent**.** Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation**.** Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria. The design criteria for this treatment facility are sufficient to meet the NPDES permit limit on a consistent basis. In order to meet the standards for maximum achievable control technology (MACT) for hazardous air pollutants, the company will dedicate one of the UNOX systems to treat hazardous air pollutants and one of the seven secondary clarifiers to settle solids from the dedicated UNOX system. The flow from this unit will be routed back into the main system after treatment. Basically, there are no major changes to the system. Part of the wastewater treatment plant will be isolated to treat the hazardous chemicals separately. The company is performing a full-scale study under an order (DE 99WQ-I034) issued on June 21, 1999.

The order issued by Ecology requires the company to monitor the results of both systems, to measure many design parameters including hydraulic and organic capacities, and treatment plant performance, and to ensure proper operation and design of both systems. In NPDES permits currently being issued by Ecology, permittees are required to perform an efficiency study and submit an engineering report to Ecology during the life of the permit. From best professional judgement, the order issued for the MACT engineering study fulfills the intent of the efficiency studies. Therefore, the efficiency study requirements will not be placed in the proposed permit.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Technology-based limitations are set by regulations or developed on a case by case basis. The proposed permit's BOD limits for unbleached Kraft/Neutral Sulfite Semi-chemical (Cross Recovery) (UBK/NSSC) paper production will be determined on a case by case basis for this permit because of restrictions imposed by past negotiated limits and rulings from the Pollution Control Hearing Board (PCHB). The BOD and TSS limits were based on a production of 2231 tons Kraft-NSSC/day by the PCHB rulings. The allowance for BOD above this production amount will be determined by the current New Source Performance Standard (NSPS) effluent guidelines.

We will prorate the previous permit components for the 2231 tons Kraft-NSSC/day pulp production for the monthly average and daily maximum BOD limits defined by the PCHB rulings and orders/permits issued by Ecology. We will use the EPA 1982 guidelines to calculate the component of the total suspended solid (TSS) limit for the 2231 tons Kraft-NSSC/day pulp production that was produced prior to the 1982 effluent guidelines promulgation. We will use the NSPS effluent guidelines to calculate the component of the TSS limit above 2231 tons Kraft-NSSC/day production. We will use the NSPS effluent guidelines to calculate the portion of the TSS and BOD limits for the old corrugated containers (OCC) and the nonintegrated paper productions. Justifications for all of the allowances used in the proposed permit are given below.

On March 16, 1994, the company permanently shut the bleach plant down and stopped making bleached Kraft (BK) pulp at the mill site. At the same time, they replaced the bleach Kraft pulp with purchased BK. Normally, the current effluent guidelines with the current production would be used to calculate the effluent limitations in the proposed permit. However, the agreed order (PCHB Nos. 86-197 and 87-6 Stipulation and Agreed Order executed July 10, 1987) prevents us from this methodology. The order set the allowances for BOD less than the effluent guideline for unbleached Kraft/Neutral Sulfite Semi-chemical-Cross Recovery (UBK/NSSC). These limitations from the order were placed in previous issued permits.

For the monthly average and the daily maximum BOD limitation calculations, the BK and the UBK/NSSC allowances were commingled in the previous permit by the agreed order. The company continues the UBK/NSSC pulp production. In order to determine the BOD limits for the proposed permit, we will have to eliminate the BK portion of the limit. The limits in the previous permit for BOD derived from the order are more stringent then the current effluent guidelines. To adhere to the anti-backsliding regulations, that is, CFR 40.122.44 (l), the order's limits are placed in the proposed permit. One logical method of obtaining the monthly average and daily maximum limits that prevent backsliding, is to prorate the allowances for both grades of pulp using the production or using the product of the production and the BOD allowances from the 1982 effluent guidelines. If we prorate with production, we will overweigh the unbleached Kraft portion since the allowance for unbleached grade of pulp is less than the allowance for BK. If we use the product of the production and the 1982 effluent guidelines allowance divided by the total allowance for these two types of pulp productions, we will prorate the two categories at the same percent.

The proration with the product of production and the 1982 effluent allowance is based on pound BOD/day UBK-NSSC divided by the sum of the pounds BOD/day UBK-NSSC and the pounds BOD/day BK. If we multiply this fraction by the BOD effluent limit in the order and divide by the production of UBK-NSSC per day, we will obtain the allowance for the UBK/NSSC pulp production.

The monthly average BOD effluent allowance for UBK-NSSC in the agreed order is 9,000 lbs. BOD/day. The proration using the product of the 1982 effluent guidelines allowances for the monthly average yields 3.26 lbs. BOD/ton of pulp produced by the UBK/NSSC pulping process. The equation is as follows:

$$\frac{\text{lbs.BOD}}{\text{ton}} \equiv \frac{(2231)\,\text{tons UBK-NSSC/day} * (8)\,\text{lbs BOD/ton}}{(2231)\,\text{tons/day} * (8)\,\text{lbs BOD/ton} + (298)\,\text{ton BK/day} * (14.2)\,\text{lbs/ton}} * \frac{(9{,}000)\,\text{lbs BOD/day}}{(2231)\,\text{tons UBK-NSSC/day}}$$

The daily maximum BOD effluent allowance for UBK-NSSC in the agreed order is 36,800 lbs. BOD/day. The proration of the effluent guideline's allowance for the daily maximum yield 13.4 lbs. BOD/ton of pulp produced by the UBK/NSSC pulping process. The equation is as follows:

$$\frac{\text{lbs.BOD}}{\text{ton}} \equiv \frac{(2231)\,\text{tons UBK-NSSC/day} * (16)\,\text{lbs BOD/ton}}{(2231)\,\text{tons/day} * (16)\,\text{lbs BOD/ton} + (298)\,\text{ton BK/day} * (27.3)\,\text{lbs/ton}} * \frac{(36{,}800)\,\text{lbs BOD/day}}{(2231)\,\text{tons UBK-NSSC/day}}$$

For the daily maximum and monthly average TSS limit, the aforementioned order used the 1982 federal effluent guidelines as specified in the letter to the permittee from Richard A. Burkhalter dated September 28, 1987. Therefore, we can use the effluent guidelines for calculating the TSS limits for the proposed permit.

Since the BOD and TSS limits already existed in a previous permit and were based on a production of 2231 tons/day UNB/NSSC, we will assume that the production had the correct moisture content and that trim-cull was included in the limit calculations. The amount of cull and trim currently produced and recycled is 8.35 percent. However, the current production does not include trim and cull. Therefore, if we divide the 2231 tons/day UNB/NSSC production by 1.0835 and subtract the amount from the current production, we will have the amount of production that does not include the allowance for trim and cull. Now, if we multiply this production by 1.0835 factor and add it to the 2231 production, we will obtain the off of the machine paper production including cull and trim. For the current production of 3100 tons/day, the off of the machine production is 3360 tons/day. The future production of 3600 tons/day becomes 3900 tons/day.

As previously mentioned, the most current guidelines for the categories of pulp made at the mill site were published in the federal register on November 18, 1982 and March 30, 1983. The federal effluent guidelines for best conventional pollutants control technology (BCT) for the categories of pulp made at the site were defined on December 17, 1986 to be the same as BPT previously defined in March 1983. BCT and BPT were defined more than ten years ago. With BCT and BPT being defined longer than ten years, it is Ecology policy to determine if they are still valid and if they can still be considered equivalent to all known and reasonable treatment (AKART) for these categories of paper making.

On April 15, 1998, the Environmental Protection Agency promulgated effluent guidelines for the bleached Kraft Papergrade and Soda subcategories and Papergrade Sulfite subcategory. The 1998 allowance for BOD and TSS in pound per 1000 pound of pulp produced for the above categories were set at the same value as the allowances in the effluent guidelines published in 1982. The 1998 effluent guidelines took both emissions to air and water into consideration and included chlorinated organic compounds. Secondary treatment was the required type of treatment.

The mill's process wastewater receives primary treatment followed by secondary treatment with a pure oxygen activated sludge treatment system (UNOX). Throughout the history of the effluent guidelines, secondary treatment has been the accepted standard for BOD and TSS removal. It is expected that in the immediate future this trend will continue as indicated by the guidelines promulgated on April 15, 1998. It is determined that the limits determined above for the UBK/NSSC pulp and paper and the NSPS effluent guidelines' for the increased portions of

UBK/NSSC paper production, for the OCC paper production, and for the nonintegrated paper production are equivalent to AKART for the following reasons:

- The mill's wastewater flows had three components, that is, UBK/NSSC pulp production, OCC pulp production and nonintegrated.
- There were no changes in the new guidelines for the type of paper making promulgated on April 15, 1998.
- Secondary treatment has been and is expected to remain the level of treatment that the effluent guidelines are based on.
- All of the categories will use NSPS effluent guidelines except the 2231 tons per day.
- The allowances for the 2231 tons/day of UBK/NSSC pulp and paper are less than or equal to the 1982 effluent guidelines for conventional pollutants.
- The allowance for BOD will be based on values less than the allowances in the 1982 effluent guidelines.
- Two other permits have been issued with the 1982 effluent guidelines being determined to be equivalent to AKART.

Therefore, the calculated allowance for the production of the Unbleached Kraft/NSSC governed by the order for the monthly average and daily maximum BOD limits are 3.26 lbs. BOD/ton Kraft-NSSC/day and 13.4 lbs. BOD/ton Kraft-NSSC/day, respectively. The production from the same letter was 2231 tons Kraft-NSSC/day. The effluent guidelines in 40 CFR 430.223 Subpart V will be used in the calculation of the production related to the Kraft/NSSC portion for daily maximum and the monthly average TSS for the 2231 tons/day production. The effluent guidelines in 40 CFR 430.225 Subpart V NSPS will be used in the calculations of the increased production related to the Kraft/NSSC portion. The effluent guidelines in 40 CFR 430.55 Subpart E NSPS will be used in the calculations of the OCC portion of the production. The OCC furnish is almost made up entirely of corrugated paper. The effluent guidelines in 40 CFR 430.265 Subpart Z NSPS will be used in the calculation of the production related to the nonintegrated paper production. Effluent guidelines' allowances for these types of production are given below:

	BOD 30 day ave lbs./ton		BOD daily max lbs./ton		TSS 30 day ave lbs./ton		TSS daily max lbs./ton	
UBK/NSSC	3.26	(1)	13.40	(1)	12.50	(2)	25.00	(2)
UBK/NSSC	4.20	(3)	7.80	(3)	7.60	(3)	14.60	(3)
OCC (4)	4.20	(3)	7.80	(3)	4.60	(3)	8.80	(3)
NI	3.80	(3)	8.00	(3)	3.00	(3)	7.00	(3)

1. Prorated from 1982 guidelines
2. 1982 Effluent guidelines
3. 1982 Effluent Guidelines, New Source Performance Standard
4. Corrugated

Each subcategory of production was determined from the individual production levels submitted by the permittee on the past two-year's discharge monitoring reports (DMR). Since, the sum of reported individual subcategories on the DMR was higher than the total base production the individual subcategories were normalized to the total base production. The total base production level was calculated as the highest 12 month rolling average over the past two years from the total production reported on the DMR. The production values were corrected to off the machine production values.

The production used is given below:

Percent	73.33%	21.07%	5.6%	Total combined production
Production	UBK/NSSC Tons/day	OCC Tons/day	NI Tons/day	Tons/day
Base	2231			
(NSPS)	232	708	188	3360(*)
Phase I (base)	2231			
(NSPS)	629	822	218	3900(*)

*** Off machine production**

The limits are calculated using the production and allowances indicated plus the allowed limits for the sanitary discharge. The limits are rounded to the nearest 100 lbs. The effluent limits are summarized below:

	BOD Monthly Average	BOD Daily Maximum	TSS Monthly Average	TSS Daily Maximum
Base	12,000	38,800	33,500	66,800
Phase I	14,200	43,000	37,100	73,800

SANITARY WASTEWATERS

For the sanitary wastewater treatment system, the previous permit set limits for both BOD and TSS of 30 mg/L and 38 lbs./day for the monthly average and of 45 mg/L and 90 lbs./day for the daily maximum, respectively. The permit set a limit of 200-count/100 mL for the monthly geometric mean fecal coliform and a daily maximum of 400 count/100 mL. The permit set a chlorine residual limit of 0.1 to 4.0 mg/L. The 30-30 limits for this system are considered AKART. These limits will be carried over into the renewal of the permit except for the maximum chlorine limit. The maximum chlorine residual has been increased to 6 ppm (see page 14 of the factsheet for the discussion of the increase). The percent removal requirement of WAC 173-221-040(1) was inadvertently left out of the previous permit. The removal efficiency for sanitary wastewater treatment systems are set at 85 percent removal of BOD and TSS by WAC 173-221-040.

However, for trickling filter plants constructed prior to November 1984, the permittee is allowed a lower removal efficiency if the influent to their system has low levels of BOD and TSS and meets certain criteria set forth in WAC 173-221-050. During the review, the permittee submitted data showing the influent concentration for BOD and TSS met the criteria set forth in WAC 173-221-050(4-a & b). Therefore, the percent removal of 65 percent has been placed in the permit.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

ANTIDEGRADATION

The State of Washington's Antidegradation Policy requires that discharges into receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of the receiving waters are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of the receiving waters are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody critical conditions, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges into the Columbia River that is designated as a Class A receiving water in the vicinity of the outfall. Other nearby point source outfalls includes Cowlitz County Regional Treatment plant, Weyerhaeuser Longview Pulp and Paper Mill, Reynolds Aluminum, and Port of Longview. Characteristic uses include water supply (domestic, industrial, and agricultural); stock watering; fish migration; fish spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all uses.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliforms	100-organisms/100 mL maximum geometric mean and not more than 10 percent of all samples obtained for calculating the geometric mean value exceeding 200-colonies/100 mL.
Dissolved Oxygen	Special Condition - 90 percent of saturation
Temperature	Special Condition - 20 degrees Celsius maximum or if the receiving waters temperature is greater than 20 degrees Celsius no increases above background shall be greater than 0.3 degrees for a single source or 1.1 degree Celsius due to all such combined activities.
Fish passage	Special condition – special fish passage exemption as described in WAC 173-201A-060 (4)(b).
pH	6.5 to 8.5 standard units
Turbidity	less than 5 NTU above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls that the Department has determined to be AKART. Mixing zones are authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC. The chronic mixing zone boundary is defined as a line 335 feet from any diffuser in the down river direction. The acute mixing zone boundary is defined as a line 33.5 feet from any diffuser in the down river direction.

The dilution factors determined by the study is listed in the following table:

	Acute	Chronic
Aquatic Life	17	120
Human Health, Carcinogen		120
Human Health, Non-carcinogen		120

The acute and chronic dilution factors from the 1997-dilution study were used in the following determination. Pollutants in the effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the

method of calculating surface water quality-based effluent limits varies with the point at which the pollutant has its maximum effect. The derivation of surface water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water. The impacts of dissolved oxygen deficiency, temperature, pH, fecal coliform, chlorine, ammonia, metals, and other toxics were determined as shown below, using the dilution factors at critical conditions described above.

Sanitary wastewater chlorine residual – The permittee performed a dilution study for chlorine residual in the receiving water in 1997. The study determined that the water quality criteria for chlorine at the edge of the chronic dilution zones are met if the residual in the sanitary effluent was less than 8 ppm. This study did not take into account the chlorine demand in the process wastewater. The previous permit placed a maximum of 4 ppm on chlorine residual at the end of the pipe at the sanitary effluent to meet the water quality criteria. Since the limit is a water quality limit, the limit can be increased to 6 ppm without backsliding by considering the new information provided by the permittee. The 6-ppm chlorine limit has been placed in the proposed permit.

BOD_5 -- The impact of BOD on the receiving water was modeled using the Streeter-Phelp's equation, at critical condition and with the technology-based effluent limitation for BOD_5 described under "Technology-Based Effluent Limitations" above. This discharge with technology-based limitations results in a small amount of BOD loading relative to the large amount of dilution occurring in the receiving water at critical conditions. Technology-based limitations will be protective of dissolved oxygen criteria in the receiving water.

Temperature – Several points on the lower Columbia River have been listed on the 1998 Section 303(d) list for temperature. There are no data on a continuous basis for temperature and only very little on grabs sampling near the permittee's discharge. The sampling points for temperature that the 303 (d) listing was based on were far apart. Also, the sampling points were far from the permittee's chronic dilution zone boundary. As a result of the scarcity of data near the permittee's discharge point, the proposed permit will be require the permittee to monitor the temperature of their discharge on a continuous basis and perform a temperature effect study on the receiving water (Columbia River) for two years.

Since the 1998 303 (d) listing of the Columbia River did not take any measurements of temperature at the location near the permittee's outfall, it is unknown if the river should be listed at the location of their discharge. The available data (USGS – Beaver Army Terminal near Quincy, Oregon) shows that about 90 percent of the measured temperature values are below the water quality criteria.

The reasonable potential analyses showed that at the acute and chronic dilution ratio the water quality criteria would be met.

pH -- The pH of the effluent was assumed to be at the lowest value in the current permit, 5.4 SU with the alkalinity of 0.0. The receiving water alkalinity was determined to be about 50-mg calcium/liter in the permittee's 1992 river survey. This value was used for the alkalinity with the above temperatures of the receiving water. There was no change in the pH. Therefore, no further studies or limitations are required beyond the technology limit. The current permit limits will be kept in the proposed permit.

Turbidity--The impact of turbidity was evaluated based on the range of turbidity in the effluent and turbidity of the receiving water. Due to the large degree of dilution, it was determined that the turbidity criteria would not be violated outside the designated mixing zone.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge, ammonia, zinc, iron, aluminum, chloroform, and fecal coliform. A reasonable potential analysis (See Appendix C) was conducted on these parameters to determine whether or not effluent limitations would be required in this permit.

The determination of the reasonable potential for the above listed chemicals and fecal coliforms to exceed the water quality criteria was evaluated with procedures given in EPA, 1991 at the critical condition. The critical conditions occur in the summer time. The parameters used in the critical condition modeling are as follows: the acute dilution factor 17, the chronic dilution factor 120, receiving water temperature 20 ^{o}C, receiving water alkalinity of 50.0 (as mg $CaCO_3$/L). Water quality criteria for metals in Chapter 173-201A WAC are based on the dissolved fraction of the metal.

Valid ambient background data was available for aluminum, iron, and ammonia from the USGS web site at http://water.usgs.gov/nasqan/data/finaldata/beaver.html and zinc from the Oregon Department of Environmental Quality laboratory. Calculations using all applicable data resulted in a determination that there is no reasonable potential for this discharge to cause a violation of water quality standards. This determination assumes that the Permittee meets the other effluent limits of this permit.

WHOLE EFFLUENT TOXICITY

The previous permit required the permittee to perform an acute and chronic characterization of their effluent. The last WET testing for the acute daphnia test species was performed in September 1992 and the last chronic testing was done in February 1993. Because the WET rule has changed, the dilution factor has changed, and the mill processes have changed, the permittee will be required to re-characterize their effluent in the proposed permit.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

A determination of the discharge's potential to cause an exceedance of the water quality standards was conducted as required by 40 CFR 122.44(d). The reasonable potential determination was evaluated with procedures given in the Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) and the Department's Permit Writer's Manual (Ecology Publication 92-109, July, 1994). The determination indicated that the discharge has no reasonable potential to cause a violation of water quality standards, thus an effluent limit is not warranted

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health for marine waters in Puget Sound. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400). The permittee discharge is to freshwater. There are no sediment standards for this class of water. The permittee performed a sediment study in the previous permit. Also, Ecology performed sediments sampling and analyses in the vicinity of the permittee's outfall in a class II enhanced inspection. Because data has already been collected near the outfall and there are no standards for this class of waters, there will be no requirement placed in this permit to monitor sediment. If sediment standards are promulgated by Ecology in the future, Ecology will consider requiring the permittee to perform another sediment study to conform with the regulatory samplings, testing, and analyses of the sediment in the vicinity of the permittee's outfall.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100). The Permittee has no discharge to groundwater; therefore, no monitoring or limitations are required.

COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED MAY 10, 1991.

	Process Wastewater			
	Existing Limits		Proposed Limits	
Production Basis	Based on 3,000 tons/day		Based on 3,100 tons/day	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Process wastewater Parameters				
BOD (lbs./day)	13,300	44,700	12,000	38,800
TSS (lbs./day)	42,500	83,300	33,500	66,800
pH (SU - minimum/ maximum)	5.4	9.0	5.4	9.0

	Sanitary Wastewater			
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
BOD Concentration (mg/L)	30	45	30	45
BOD (lbs/day)	38	90	38	90
TSS Concentration (mg/L)	30	45	30	45
TSS (lbs/day)	38	90	38	90
Chlorine residual (mg/L)	Range 0.1 to 4.0		Range 0.1 to 6.0	
Fecal coliform (No./100 ml)	200	400	200	400
Removal of BOD and TSS (%)	-		65	
pH (SU - minimum/ maximum)	Range 6.0 to 9.0 at all times			

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies takes into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

The permittee shut the bleached Kraft pulp line down on March 18, 1994. Therefore, the permittee stopped using chlorine compounds to bleach any pulp at the mill site The permittee would have to go through SEPA and the permitting process again in order to start producing bleached pulp. The previous permit limited the concentration of dioxins in the discharge from health and water quality toxicity of these compounds. Also, the company was required to monitor absorbable organic halides on a weekly basis. Without the use of chlorine to bleach pulp, it is unlikely that any of these compounds are produced in the paper making process. Therefore, all monitoring and limitations are removed from the proposed permit for AOX and dioxin except those mentioned below for secondary sludge. This is not backsliding because these limitations were placed in the previous permit because of water quality and health quality toxicity. However, dioxin compounds have showed up in the sludge. Therefore, the permittee will be required to test for dioxin compounds in the secondary sludge and effluent once per year during the terms of the proposed permit.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories.* The laboratory at this facility is accredited for BOD, TSS, pH, total chlorine, and dissolved oxygen.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and record keeping requirements to prevent and control waste discharges (WAC 173-220-210).

NON-ROUTINE AND UNANTICIPATED DISCHARGES

Occasionally, this facility may generate wastewater that is not characterized in their permit application because it is not a routine discharge and was not anticipated at the time of application. These typically are waters used to pressure test storage tanks or fire water systems or leaks from drinking water systems. These are typically clean wastewaters but may be contaminated with pollutants. The permit contains an authorization for non-routine and unanticipated discharges. The permit requires a characterization of these wastewaters for pollutants and examination of the opportunities for reuse. Depending on the nature and extent of pollutants in this wastewater and opportunities for reuse, Ecology may authorize a direct discharge via the process wastewater outfall for clean water, require the wastewater to be placed through the facilities wastewater treatment process, or require the water to be reused.

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080. The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update the plan.

SOLID WASTE PLAN

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state from leachate of solid waste. This proposed permit require under the authority of RCW 90.48.080 that the Permittee update the solid waste plan designed to prevent solid waste from causing pollution of the waters of the state.

OUTFALL EVALUATION

Proposed permit condition requires the Permittee to conduct an outfall inspection and submit a report detailing the findings of that inspection. The purpose of the inspection is to determine the condition of the discharge pipe.

TREATMENT SYSTEM OPERATING PLAN

It has been determined that the implementation of the procedures in the Treatment System Operating Plan is a reasonable measure to ensure compliance with the terms and limitations in the permit. In accordance with state and federal regulations, the Permittee is required to take all reasonable steps to properly operate and maintain the treatment system (40 CFR 122.41(e)) and WAC 173-220-150 (1)(g). The proposed permit requires the permittee to update the treatment system operation plan.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for five (5) years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the Longview Fibre Company, Longview, Washington. The permit contains conditions and effluent limitations that are described in the rest of this fact sheet.

The Department will publish a Public Notice of Draft (PNOD) on March 23, 2001 in the Daily News to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the office listed below. Written comments should be mailed to:

Don Nelson
Department of Ecology
Industrial Section
300 Desmond Drive
P. O. Box 47600
Olympia, Washington 98504-7600

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6940, or by writing to the address listed above.

The permit and factsheet were written by Don Nelson.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

PH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined, as neutral and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Responsible Corporate Officer-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic faunas. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at http.www:wa.gov.ecology.

APPENDIX D--RESPONSE TO COMMENTS

I. Longview Fibre, Al Whitford

Comment 1:

… the bottom of page 6 … description of footenotes "c" and "d" should be switched.

Response:

Thanks, the footnotes numbers have been switched.

Comment 2:

There is a duplication in the table on Page 8. The requirement to monitor flow of the "Wastewater Effluent" is listed twice.

Response:

Thanks, the second one has been deleted in the final permit.

Comment 3:

… page 8, … new requirement to monitor and report the concentration of COD … Do we have to use an accredited laboratory? … running COD tests for long time … but not accredited …

Response:

It is my understanding that you may want to perform the tests in your laboratory. If so, your laboratory accreditation renewal become due in December 2001. After talking to our laboratory, you should be able to become interim accredited in December, 2001, if you send the accreditation requirements for COD with the renewal package. Language has been added to the permit that the data required by the COD monitoring condition be submitted starting one year after the effective date of the permit. This delay in reporting will enable your laboratory to become accredited. Also, I have changed the frequency of monitoring to weekly to align the frequency with previous directions from my supervisor.

Comment 4:

The last paragraph on page 10 requires that any additional data gathered under certain conditions be included in the calculation of reported values. Could you clarify this for me?

Response:

This means that if your laboratory run more samples, other than for operational control, then you must used all the data gathered in the time frame of the reporting requirements. See S2. (D) page 9 Laboratory Accreditation. For example, if you chose to perform more than one test per year on TCDD, you would be required to submit all of these data.

Comment 5:

The mixing zone paragraph at the top of page 15 should be modified slightly because of the tidal influences on the river at the point of our discharge.

Response:

The upstream boundary has been defined in the permit condition in accodance with WAC 173-201A-100(7)(a)(1) to extend upstream 100 feet. The sides condition was taken from the previous permit to be 50 feet from the ends.

Comment 6:

Ecology received four comments related to the temperature study of the Columbia River. These comments are discussed under the response to EPA comment on this topic.

II. Longview Fibre, David Mendenhall

Comment 1:

On page #6 of 33 there is a problem with the footnotes on the chart entitled "Effluent Limitations: Outfall #001", the footnotes for "a" and "b" have been reversed.

Respsonse:

Thanks.

Comment 2:

See comment # 3, above.

Comment 3:

See comment # 5 above.

Comment 4:

On page # 23 of 33 under "certified Operator" the language is confusing. … do we need a Class I or Class II operator.

Response:

The condition requires that a Class II operator be in charge of the operations of the sanitary wastewater treatment system. A Class I operator can be onsite on all shift as long as he/she reports to the Class II operator and the Class II operator direct the treatment system operation, control, and maintenance. The condition was left the same.

Comment 5:

Ecology received four comments related to the temperature study of the Columbia River. These comments are discussed under the response to EPA comment on this topic.

Comment 6

Page 27 General Condition G2. Right of Inspection and Entry, Paragraph "D" … Remove the phrase "at any location"

Response:

The phrase comes directly from state law, that is, RCW 90.48.090 and federal regulations 40 CFR 122.41(i). The phrase is kept.

Comment 7:

G19 Toxic Pollutants … We would like to change it to the following; "If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition is more stringent than any limitation upon such effluent standard or prohibition) is established under Sec. 307(a) of the Clean Water Act for a toxic pollutant and that standard or prohibition is more stringent than any limitation upon such pollutant in the permit, the Department shall institute proceedings to modify or revoke and reissue the permit to conform to the new toxic effluent standard or prohibition."

Response:

The condition is quoted directly from CFR 122.41(a)(1). The condition is kept in the permit in its entirety.

Longview Fibre and NWPPA recommended the following condition to replace Special Condition S13 (Columbia Temperature Study) in the Lonview Fibre Company draft permit.

E. Temperature

Within one hundred and eighty (180) days after the effective date of this Permit, the Permittee shall submit a plan to the Department for review and approval to study the ambient temperature of the receiving water in the vicinity of the outfall. The study shall begin within ninety (90) days of the approval of the plan.

In order to be approved the study plan shall meet the following minimum criteria:

- The data collection phase of the study shall occur over a period of at least 24 months duration.
- The data collection phase shall focus on collecting data during the expected critical temperature period (i.e., from June 15 through September 15).
- The data collected shall include ambient receiving water temperature measurements representative of receiving water conditions upstream and downstream of the Permittee's outfall mixing zone in areas not likely to be directly affected by the Permittee's effluent.
- The data collection protocol shall be consistent with section "5. General Considerations" in Department's Water Quality Program Policy 1-11 "Assessment of Water Quality for the Section 303(d) List" (WQP Policy 1-11; June 1997).

The Permittee shall submit quarterly summaries of the receiving water temperature data during the course of the study and a final report within ninety (90) days after the completion of the study.

- The final report shall provide all measurements of ambient water temperature obtained within the scope of the study plan.
- The final report shall include a discussion of potential long-term ambient temperature monitoring location(s), important learnings on the practical ability to implement the monitoring study, and the cost of the monitoring program.
- The final report shall compare seasonal ambient receiving water temperature data with the applicable numeric water quality criteria.
- The final report shall discuss whether the receiving water needs to be included in the State of Washington's Clean Water Act Section 303(d) list utilizing the assessment criteria established in the Water Quality Program Policy 1-11.

The Permittee shall continue to obtain temperature measurements in ambient receiving water for an additional two-year period from the submittal date of the final study report. Following submittal of the final study report, receiving water temperature data shall be reported quarterly.

If the final report indicates that the receiving water temperature does not meet the applicable numeric surface water quality criteria outside the permitted mixing zone then the Department may issue a regulatory order directing the Permittee to prepare a feasibility study to investigate and evaluate all known, available and reasonable technologies to reduce the thermal loading of the Permittee's effluent during the receiving water's critical period.

If the Department orders the Permittee to initiate a feasibility study of known, available and reasonable technologies, the study shall meet the requirements of WAC 173-240-130. If required, the final feasibility study shall be submitted to the department 12 months after the date the order is issued.

The Permittee shall be deemed to comply with all effluent limitations and standards that pertain to effluent temperature and are established by this Permit as long as the Permittee complies with the requirements of this Section S1.E.

Response:

Longview Fibre and the NWPPA submitted a comment letter with a revised Columbia River temperature study. Ecology used the revised study submitted and added the revisions required to response to EPA comment letter discussed below. The paragraph dealing with the thermal loading was taken out of the final permit.

EPA comments on Special Condition S13 (Columbia Temperature Study) of the draft permit.

1. Clarify the Columbia River in the vicinity of these discharges is not currently included on the 303(d) list. This was not clearly identified in the fact sheet. Ecology might consider whether to flag the high likelihood that river temperature near these mills might exceed current state water quality criteria.

   Response:

   The Columbia River has been listed as an impaired water body along its entire length. However, most of the data used in the listing were obtained from sampling points located in the tributaries of the water body. There were three sampling locations used in the listing that were in the water body proper. These three locations are at the following coordinates:

   Latitude: 45° 56' 06" N - Longitude: 119° 45' 05" W. --- T5N, R24E, Sec 1 WA
   Latitude: 45° 42' 54" N - Longitude: 120° 41' 06" W. - - T3N, R17E, Sec 28 WA
   Latitude: 47° 18' 43" N - Longitude: 120° 04' 45" W. -- T21N, R22E, sec 16 WA

   The Longview Fibre discharge point is located about two-third down stream from the Bonneville Dam (RM 146.1 to mouth) at the following coordinates:

   Latitude: 46° 05' 45" N - Longitude: 122° 55' 40" W. – T7N, R2W, Sec16 WA

   The WBID is WA-CR-1010. This reach is made up of WRIA watersheds 25, 26, 27, 28, and part of 29. All of the listing data in WA-CR-1010 were taken in the tributaries of the Columbia River. With the tributaries being impaired, we unable at this time with the limited data available to make the determination the Columbia River should be or should not be listed at the Longview Fibre discharge point. The 303(d) listing points are for of individual Townships where the sampling points were. The location closest samples points on the Columbia River used in the 303d listing have been determined to be in different townships then discharge points. The listing of a waterbody is for the township that actual sampling has shown a violation of the

water quality criteria. The water body is not listed on the 303 (d) list at the point of the discharge of the Longview Fibre mill. Therefore, a study is appropriate to determine if the Columbia River should be listed on the 303d list as an impaired water body with respect to temperature at the township where the mill discharges are located.

2. Include or reference expectations for quality assurance of the temperature monitoring study to be conducted. Providing the permittee more specific parameters for conducting these studies should help avoid an unnecessarily long, iterative process of developing and implementing a monitoring plan. A copy of a recent Quality Assurance Project Plan for the Little Klickitat River Temperature TMDL was provided your staff as an example.

   Response:

   A quality assurance plan has been included in the permit.

3. Require monitoring be conducted over a period of two years so the study encompasses two annual warm water periods. This will help address issues associated with annual variations.

   Response:

   The study is for two years.

4. Utilize the actual configuration of the individual mill's outfall in the model developed to predict immediate mixing of effluent in receiving waters. Monitoring data collected within these outfall plumes should be used to calibrate and verify model predictions. This element of the study is important because of concerns about lethality caused by potential entrainment of fish in the effluent plume.

   Response:

   Modeling of immediate mixing of the effluent with the receiving water has been added to the permit.

5. Establish an ambient monitoring station upstream of the influence of each discharge. Monitoring should be collected along a transect of the river and at various river depths along that transect to evaluate whether stratification of water temperature is occurring. Monitoring data must be collected that is adequate to evaluate compliance with both the current and proposed state water quality standards. Although the exact form of the criteria is not yet certain, it is most likely that a 7-day average will eventually be part of the state's standards.

   Response:

   The requirement has been added. The permittee is advised that Ecology is in the process of modifying Water Quality Program Policy 1-11. The modified policy allow data to be considered from other sources if the data meet the Quality Assurance that is contained in the new policy. To ensure that the data can be considered in any decisions about the 303(d) listing of the Columbia River, the players should follow the new policy quality assurance. The new policy is expected to be published in its final form in June 2001.

6. Include a clearly written provision that the permit may be reopened and modified before expiration if the completed study or TMDL determines that water quality-based effluent limitations for temperature are necessary. Response:

   Ecology recognizes that the statement is contained in G2(4) of the permit.

7. Measure and record ambient air temperature when discharge or receiving water monitoring is being conducted.

   Response:

   The requirement has been added.